CLIMATE PLEDGE ARENA

# SUSTAINABLE INITIATIVES INTEGRATION

## Design Briefing Presentation

ARCHITECTURAL REVIEW COMMITTEE

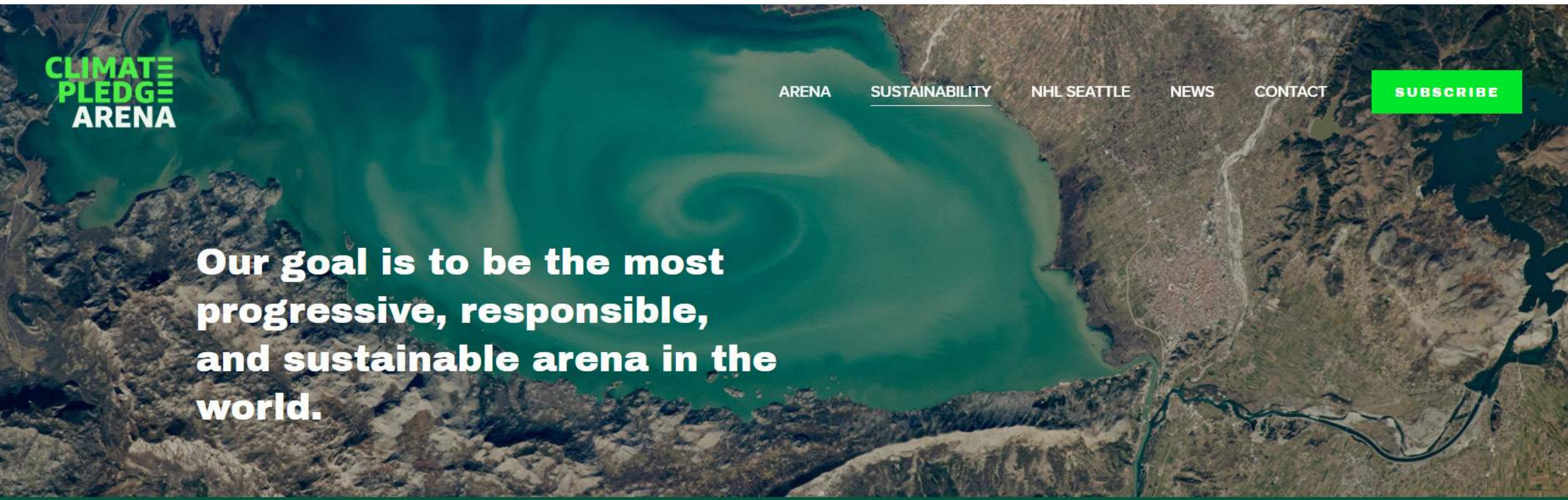
August 19, 2020

OVG OAK VIEW GROUP · seattlecenter · CAAICON · POPULOUS · DLR Group · SWIFT COMPANY


CLIMATE PLEDGE ARENA

# THE INITIATIVE





# SUSTAINABILITY GOALS

## CARBON NEUTRAL

The cornerstone of our environmental strategy is to create the first International Living Future Institute certified zero carbon arena in the world.

- Saving the historic roof and expanding underground reduces embodied energy use typical of new construction.
- No fossil fuel consumption in the arena for daily use. We will be converting all facility mechanical systems, gas combustion engines, heating, dehumidification, and cooking to electric.
- Solar Panels on the Alaska Airlines Atrium and 1st Ave Garage combined with off-site supplementary renewable energy for 100% renewable energy power.
- Fully integrated transportation plan that includes, subsidized public transportation, electric vehicle charging stations, and investment in the Seattle Center Monorail.
- Operate all events at zero carbon and purchase offsets including those for transportation.

## ZERO SINGLE USE PLASTIC

**We are the first arena and NHL Team to announce our intention to eliminate single use plastics within our venue starting in 2021 and being 100% free of single-use plastics by 2024.**

## WATER CONSERVATION

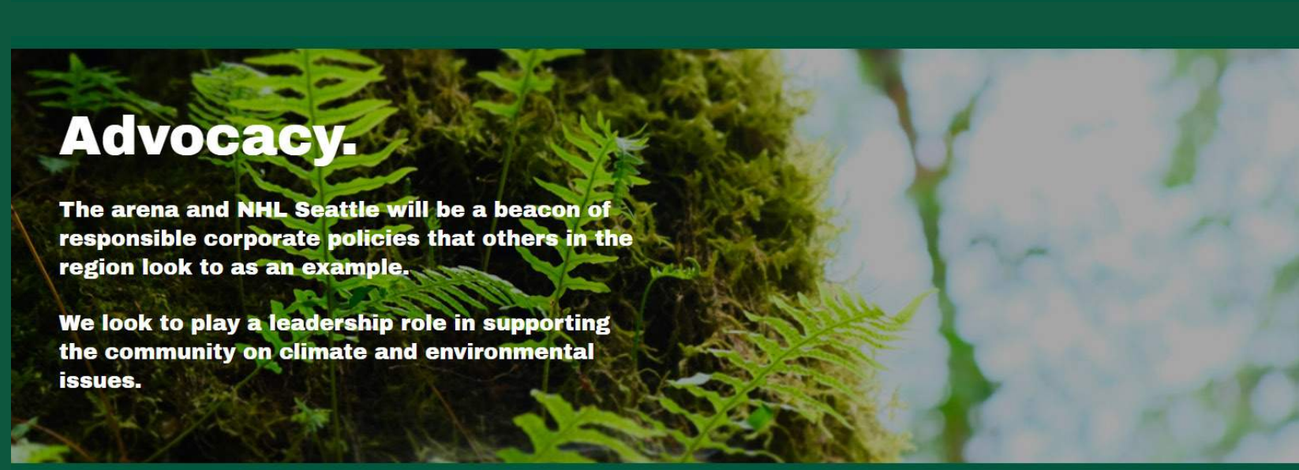
Given our location near Puget Sound, we believe it is important to demonstrate leadership in water quality and water use wherever we can.

- Our “Rainwater to Ice” system will harvest water off the roof, collect it into cisterns, and turn it into the greenest ice in the NHL.
- ‘Make it Rain’ event where fans provide rainwater for use in making ice.
- Waterless urinals and ultra-efficient showers.
- On-site stormwater retention for landscaping.
- Water bottle filling stations throughout the arena.

## ZERO WASTE

By greatly simplifying our supply chain we will target a 97%+ diversion rate, which is considered ‘zero waste’ in the industry.

- Consumer education, beautiful and simple infographics, and on-site sorting along with other techniques will allow us to reach this unprecedented level of performance.
- We will be composting our waste and recycling extensively throughout the arena.
- Removing single use plastics from the arena by 2024.



## Advocacy.

**The arena and NHL Seattle will be a beacon of responsible corporate policies that others in the region look to as an example.**

**We look to play a leadership role in supporting the community on climate and environmental issues.**

## Our Commitments

**Climate Pledge Council**
Form Arena Climate Pledge Council, led by consultant Jason F. McLennan, founder of the Zero Carbon and Living Building Challenge.

**Transparency & Reporting**
Create transparency and public reporting on initiatives progress with smart meters and displays located throughout the arena.

**Arena Events**
Host arena events that celebrate the environment and our commitments to green operations.

**Education Partnerships**
Partnerships with the University of Washington and other institutions to utilize the arena as a classroom for environmental education.

# WATER CONSERVATION

## GOALS FOR RAINWATER TO ICE SYSTEM

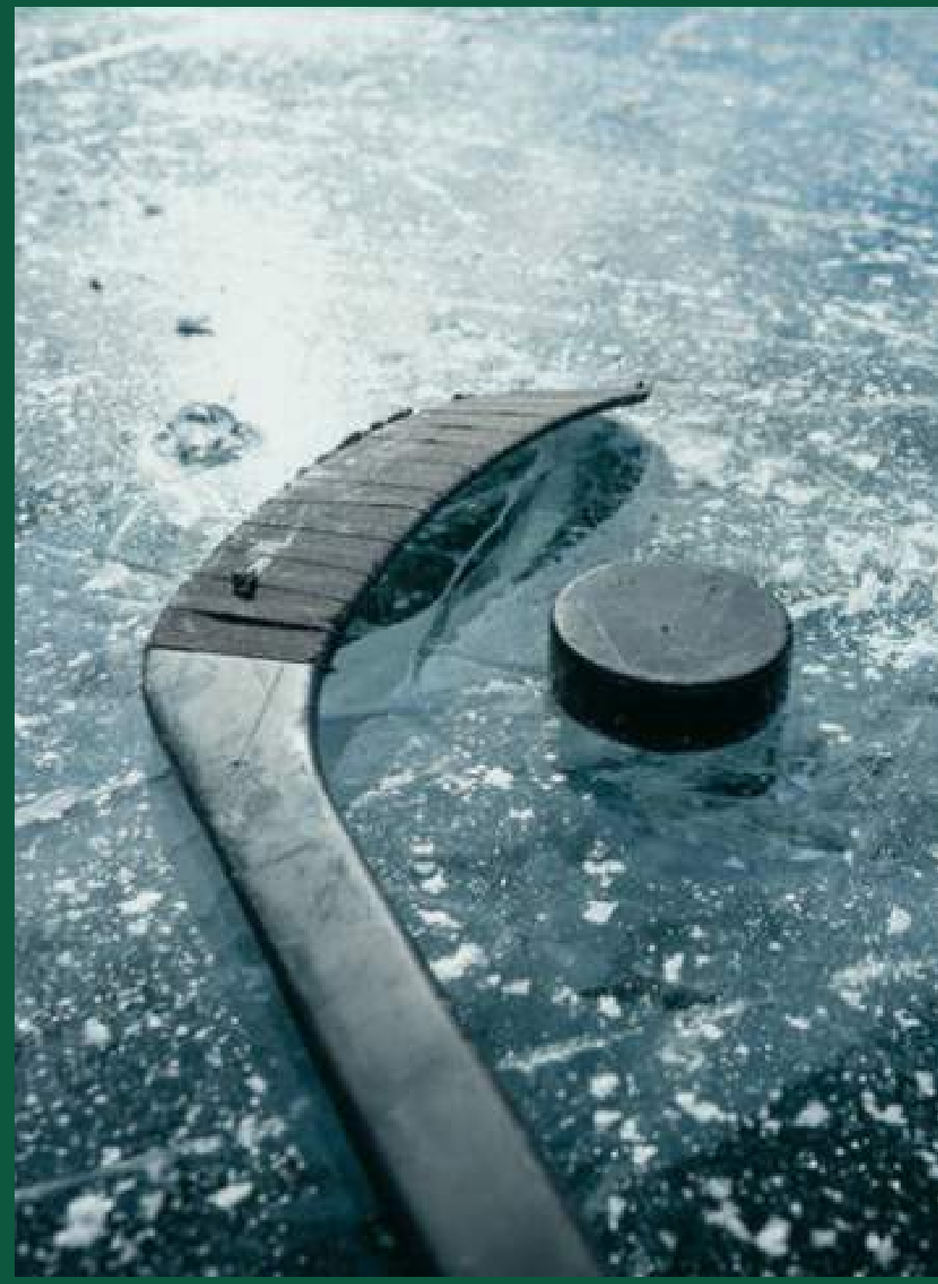
- HARVEST RAINWATER OFF THE ROOF OF THE HISTORIC ARENA

- FILTER, PURIFY, AND FUNNEL THE WATER INTO THE BUILDING FOR USE IN ICE RE-SURFACING MACHINES

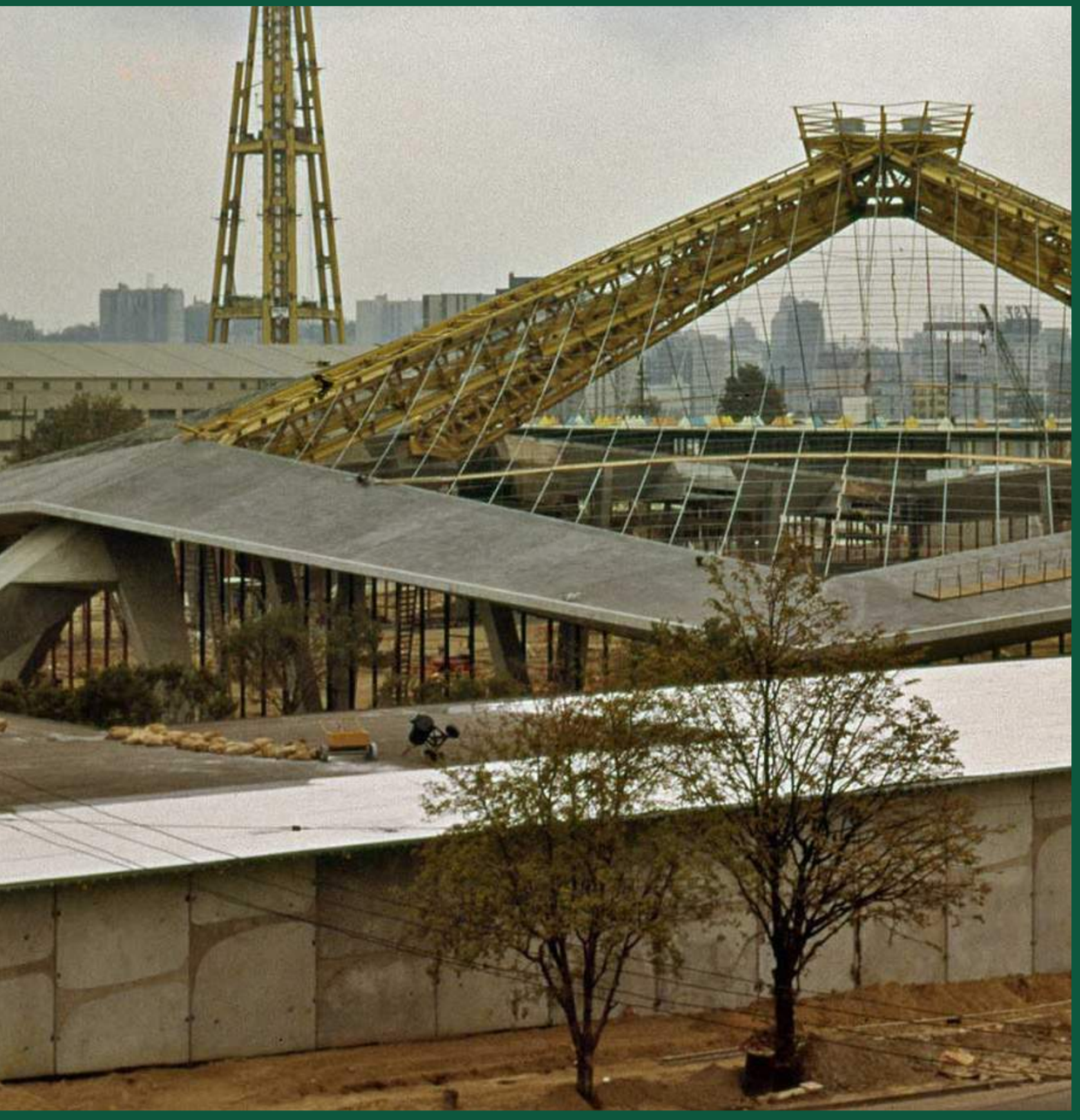
- SHOWCASE THIS SUSTAINABLE STRATEGY TO THE PUBLIC, COMMUNITY, AND VISITORS TO THE ARENA

- ALONG WITH ON-SITE LANDSCAPE BIO-RETENTION, HELPS REDUCE THE DEMAND ON STORMWATER MANAGEMENT SYSTEMS

- THE DESIGN IS ENTIRELY REVERSIBLE, AS THE SYSTEM IS PHYSICALLY DISASSOCIATED WITH THE HISTORIC STRUCTURE



# HISTORIC DESIGN PARALLELS



## INSPIRED BY THE ROOF

### RAINWATER TO ICE SYSTEM

- PAUL THIRY'S DESIGN OF THE ORIGINAL WASHINGTON STATE PAVILION FEATURES AN EXPANSIVE ROOF THAT IS HIGHLY VISIBLE AND CELEBRATED DUE TO ITS FORM AND CLOSE PROXIMITY TO THE GROUND

- 59 YEARS LATER, THAT VERY ROOF WILL BECOME THE PRIMARY VESSEL FOR HARVESTING AND RE-USING RAINWATER TO CREATE A NEW WORLD-CLASS ICE RINK BENEATH IT

- ON-SITE HISTORIC AND EDUCATIONAL DISPLAYS WILL CELEBRATE THIS LEGACY STORY AND BE VISIBLE TO THE COMMUNITY AND VISITORS TO THE SITE AND SEATTLE CENTER

# ACTIVE DISCUSSIONS AROUND WATER CONSERVATION & SUSTAINABILITY

THE COMMUNITY AND FANS CAN CONTRIBUTE TO WATER CONSERVATION, BY PROVIDING RAINWATER TO THE ARENA'S ICE-MAKING SYSTEM IN TWO WAYS:

- A WATER TANK TRUCK WILL DRIVE THROUGHOUT THE COMMUNITY AND COLLECT HARVESTED RAINWATER FROM AREA RESIDENTS

- ON-SITE EVENT WHERE FANS CAN BRING HARVESTED RAINWATER TO THE ARENA, AND POUR INTO THE CISTERN

OTHER COMMUNITY BUILDING EVENTS AROUND WATER CONSERVATION AND SUSTAINABLE AWARENESS

# RAINWATER TO ICE SYSTEM

WHERE WILL THE RAINWATER GO?

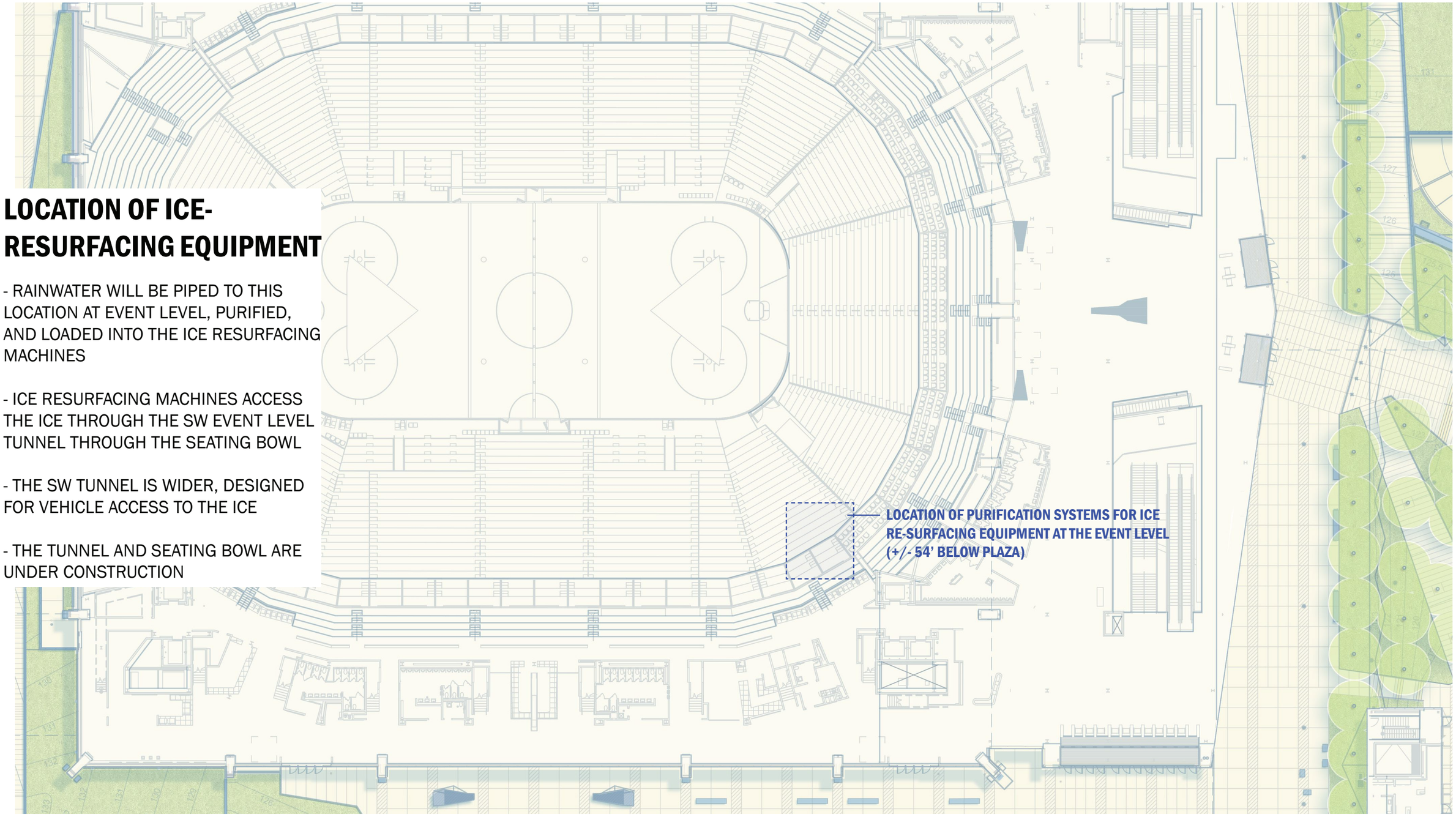
## LOCATION OF ICE-RESURFACING EQUIPMENT

- RAINWATER WILL BE PIPED TO THIS LOCATION AT EVENT LEVEL, PURIFIED, AND LOADED INTO THE ICE RESURFACING MACHINES

- ICE RESURFACING MACHINES ACCESS THE ICE THROUGH THE SW EVENT LEVEL TUNNEL THROUGH THE SEATING BOWL

- THE SW TUNNEL IS WIDER, DESIGNED FOR VEHICLE ACCESS TO THE ICE

- THE TUNNEL AND SEATING BOWL ARE UNDER CONSTRUCTION



# RAINWATER TO ICE SYSTEM

## PRELIMINARY STUDIES

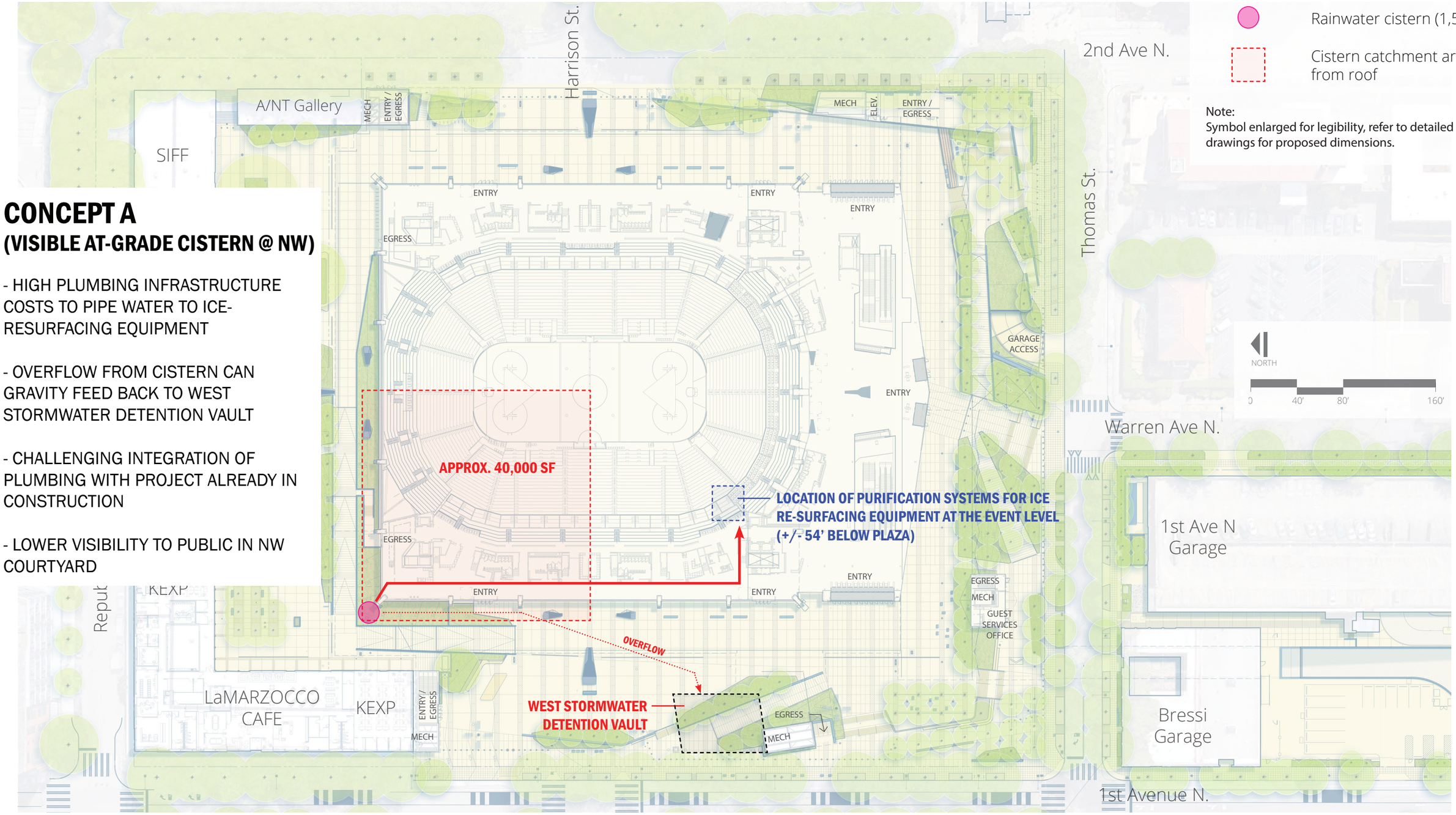
## CONCEPT A
### (VISIBLE AT-GRADE CISTERN @ NW)

- HIGH PLUMBING INFRASTRUCTURE COSTS TO PIPE WATER TO ICE-RESURFACING EQUIPMENT

- OVERFLOW FROM CISTERN CAN GRAVITY FEED BACK TO WEST STORMWATER DETENTION VAULT

- CHALLENGING INTEGRATION OF PLUMBING WITH PROJECT ALREADY IN CONSTRUCTION

- LOWER VISIBILITY TO PUBLIC IN NW COURTYARD



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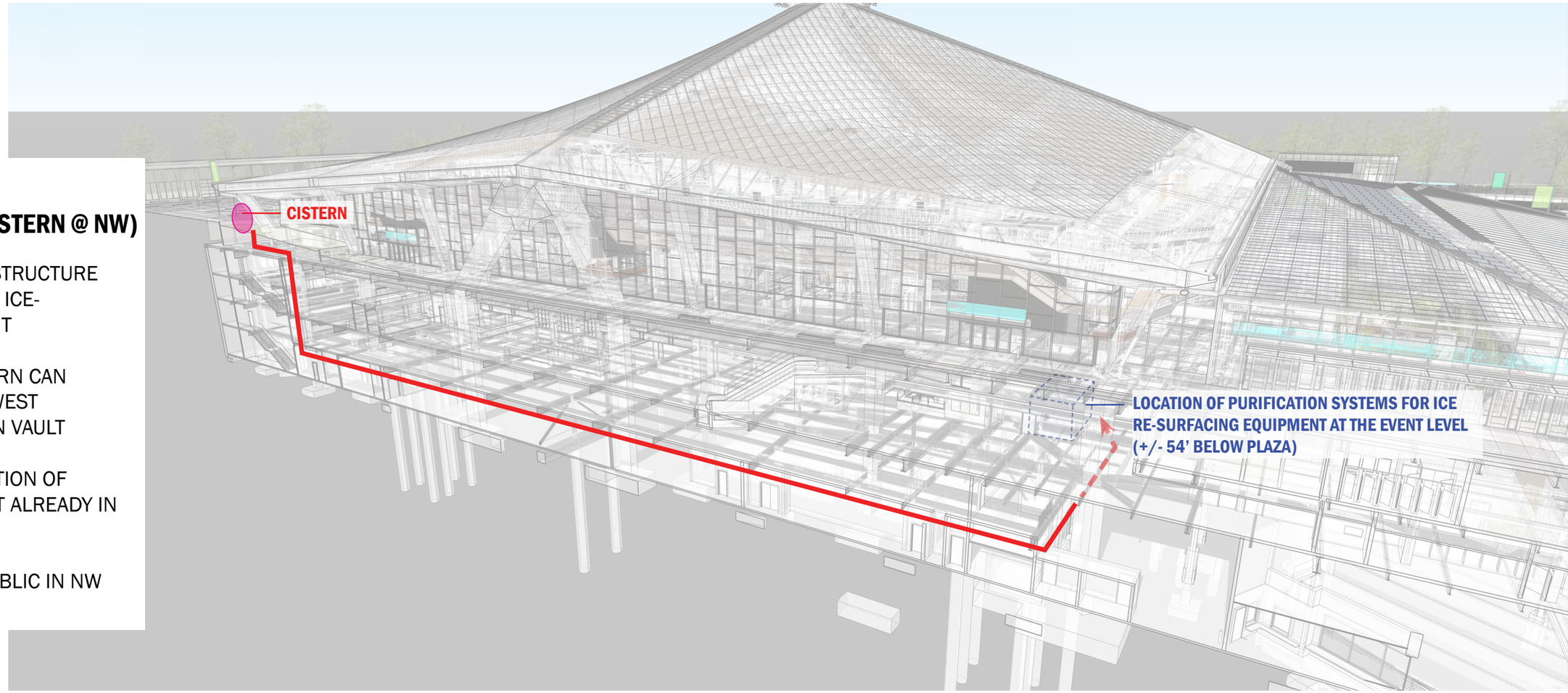


# RAINWATER TO ICE SYSTEM

## PRELIMINARY STUDIES

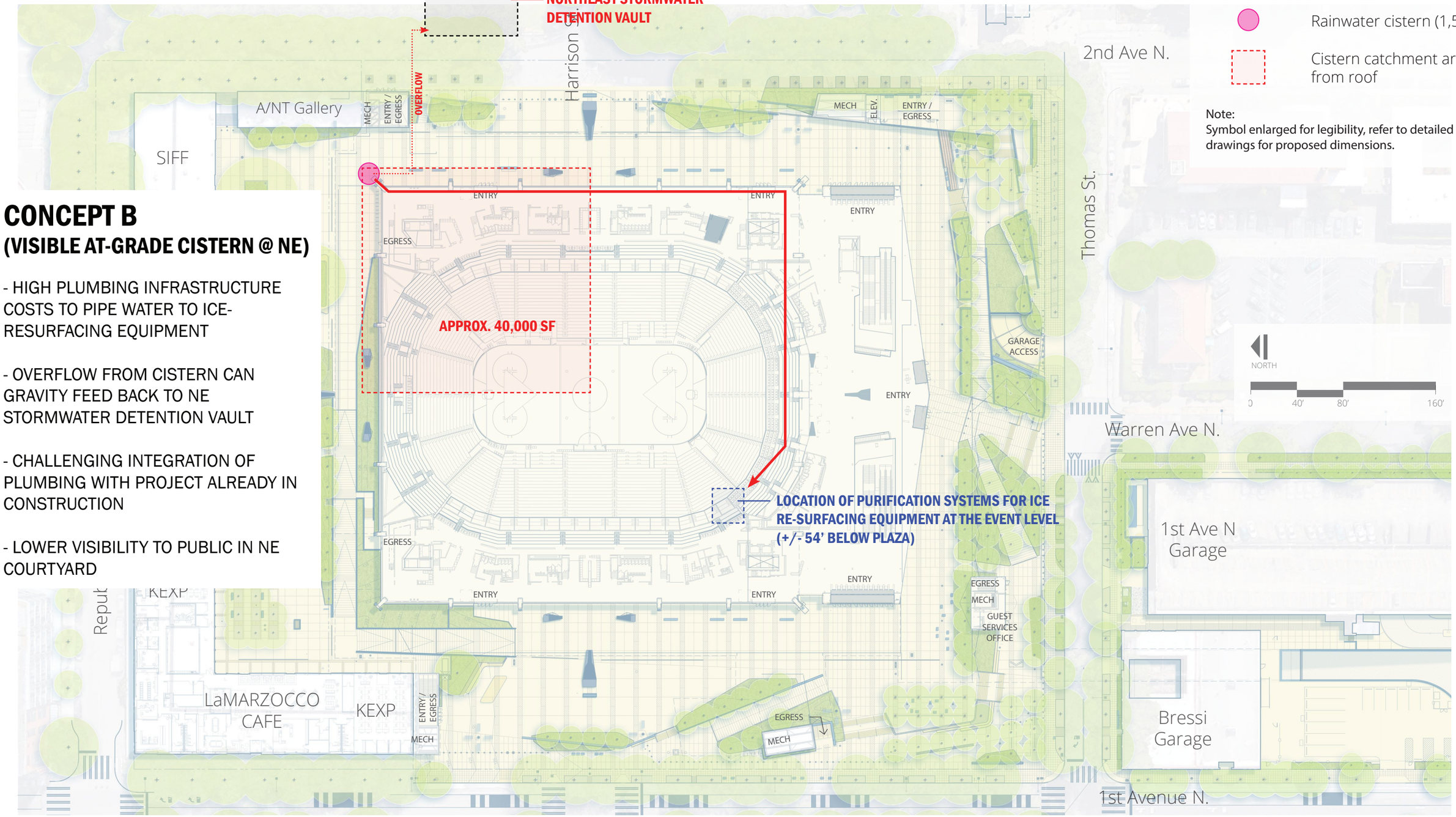
## CONCEPT B
### (VISIBLE AT-GRADE CISTERN @ NE)

- HIGH PLUMBING INFRASTRUCTURE COSTS TO PIPE WATER TO ICE-RESURFACING EQUIPMENT

- OVERFLOW FROM CISTERN CAN GRAVITY FEED BACK TO NE STORMWATER DETENTION VAULT

- CHALLENGING INTEGRATION OF PLUMBING WITH PROJECT ALREADY IN CONSTRUCTION

- LOWER VISIBILITY TO PUBLIC IN NE COURTYARD




LEGEND:

- Rainwater cistern (1,500 gal)
- Cistern catchment area from roof

Note:
Symbol enlarged for legibility, refer to detailed drawings for proposed dimensions.

# RAINWATER TO ICE SYSTEM

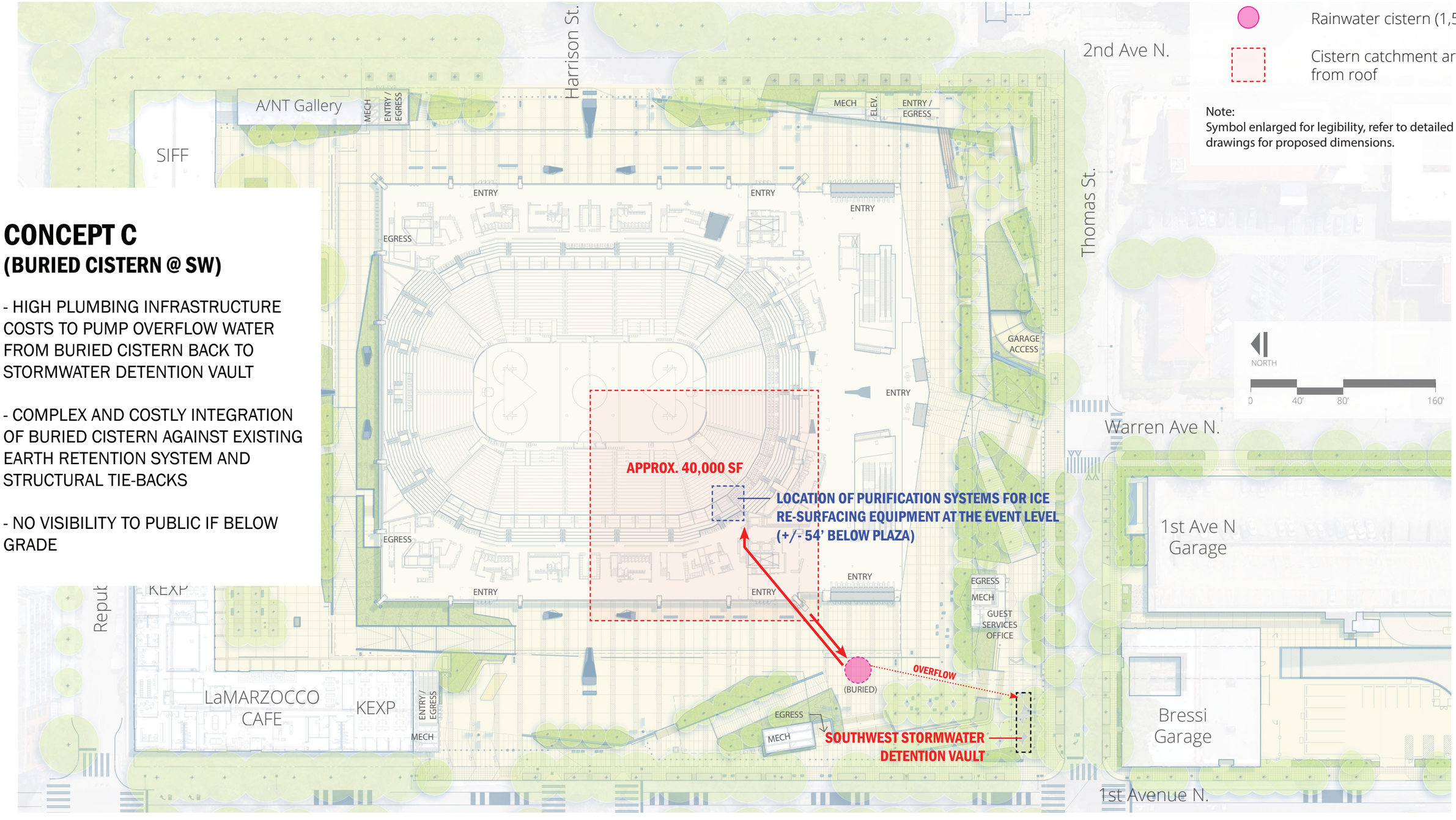
## PRELIMINARY STUDIES

### CONCEPT C
### (BURIED CISTERN @ SW)

- HIGH PLUMBING INFRASTRUCTURE COSTS TO PUMP OVERFLOW WATER FROM BURIED CISTERN BACK TO STORMWATER DETENTION VAULT

- COMPLEX AND COSTLY INTEGRATION OF BURIED CISTERN AGAINST EXISTING EARTH RETENTION SYSTEM AND STRUCTURAL TIE-BACKS

- NO VISIBILITY TO PUBLIC IF BELOW GRADE



# RAINWATER TO ICE SYSTEM

## PRELIMINARY STUDIES

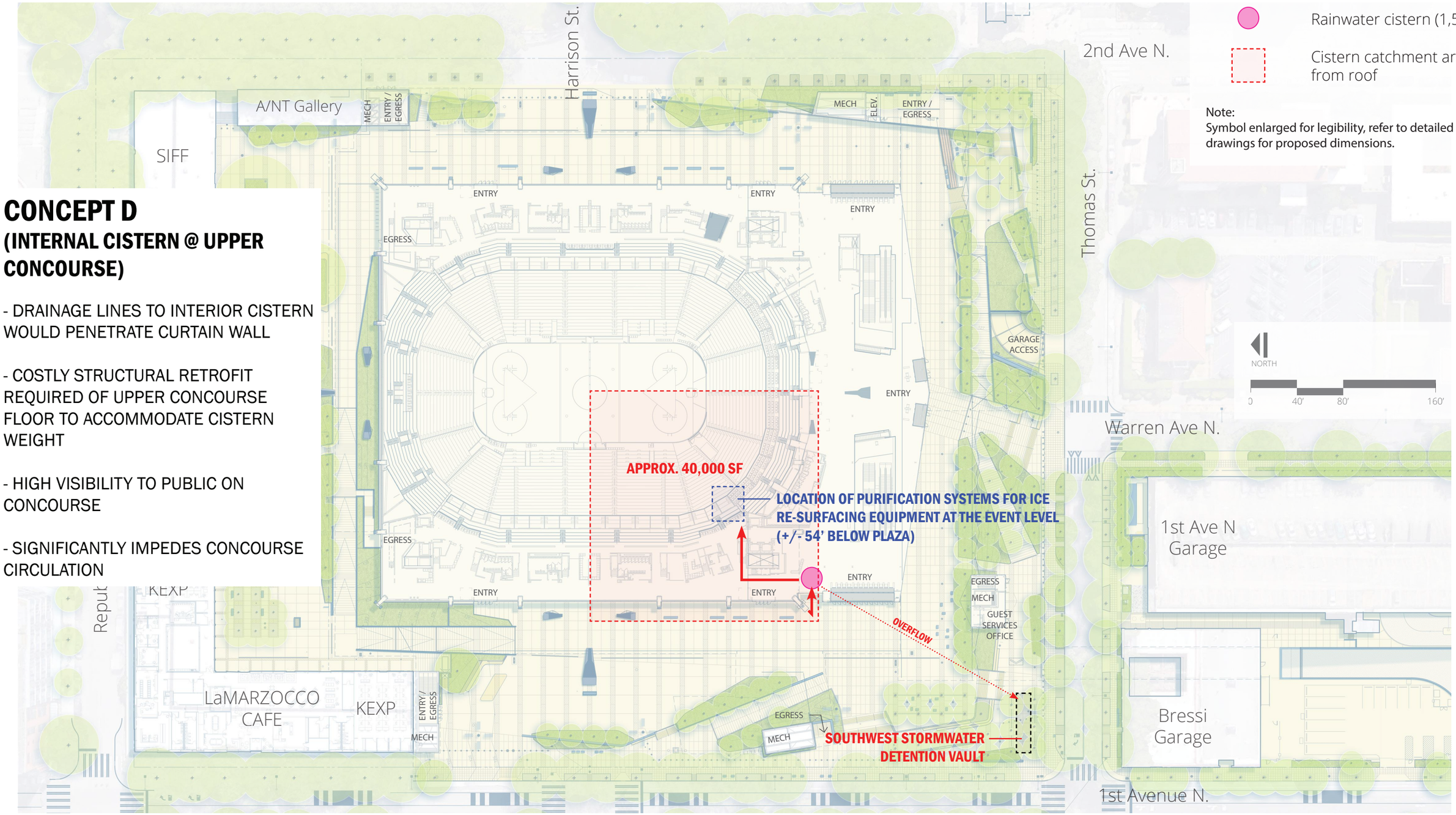
### CONCEPT D
### (INTERNAL CISTERN @ UPPER CONCOURSE)

- DRAINAGE LINES TO INTERIOR CISTERN WOULD PENETRATE CURTAIN WALL

- COSTLY STRUCTURAL RETROFIT REQUIRED OF UPPER CONCOURSE FLOOR TO ACCOMMODATE CISTERN WEIGHT

- HIGH VISIBILITY TO PUBLIC ON CONCOURSE

- SIGNIFICANTLY IMPEDES CONCOURSE CIRCULATION



# RAINWATER TO ICE SYSTEM

## PREFERRED DESIGN - SITE PLAN

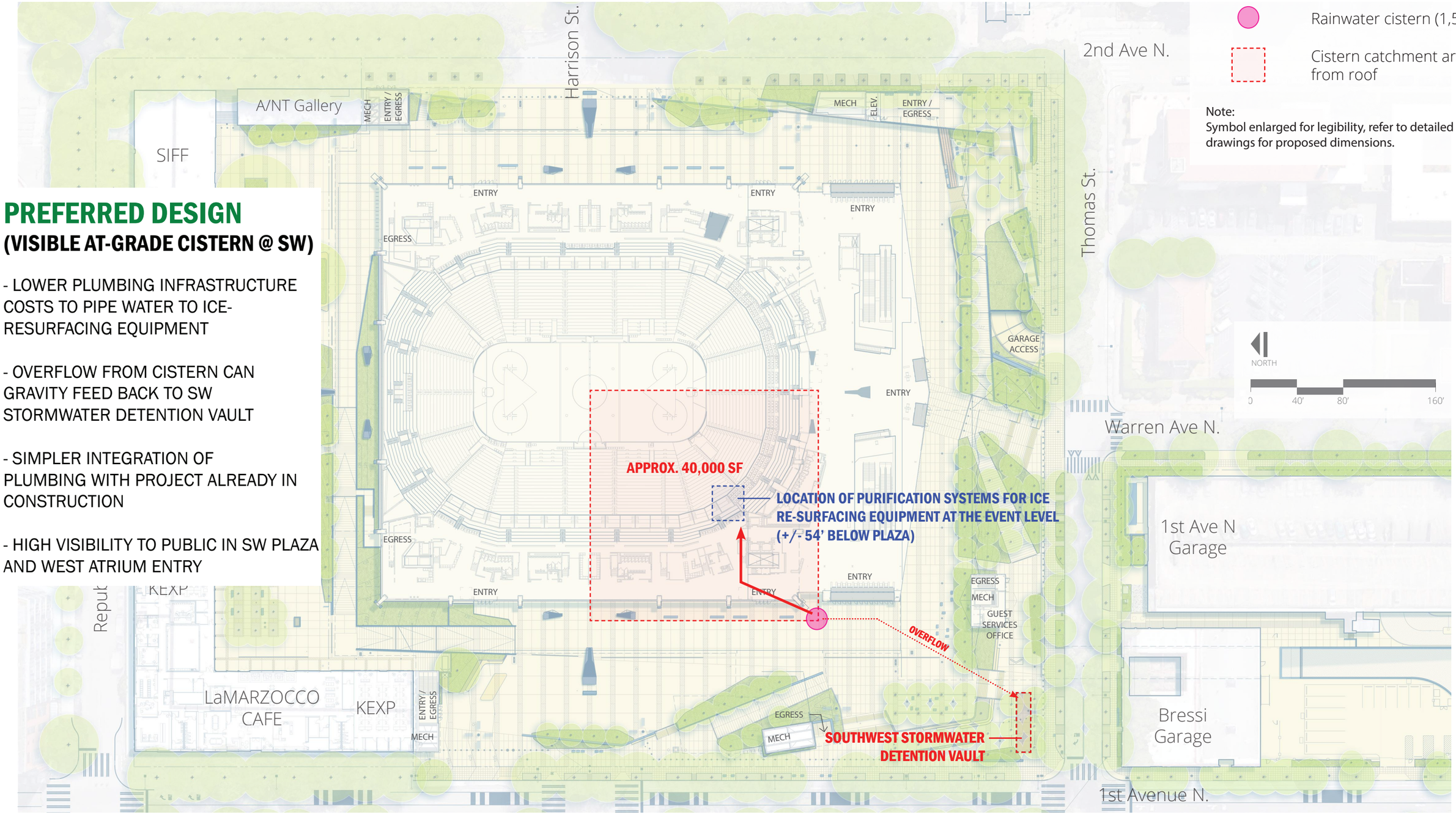
**PREFERRED DESIGN**
**(VISIBLE AT-GRADE CISTERN @ SW)**

- LOWER PLUMBING INFRASTRUCTURE COSTS TO PIPE WATER TO ICE-RESURFACING EQUIPMENT

- OVERFLOW FROM CISTERN CAN GRAVITY FEED BACK TO SW STORMWATER DETENTION VAULT

- SIMPLER INTEGRATION OF PLUMBING WITH PROJECT ALREADY IN CONSTRUCTION

- HIGH VISIBILITY TO PUBLIC IN SW PLAZA AND WEST ATRIUM ENTRY



# RAINWATER TO ICE SYSTEM

## PREFERRED DESIGN - 3D SECTION

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**(VISIBLE AT-GRADE CISTERN @ SW)**

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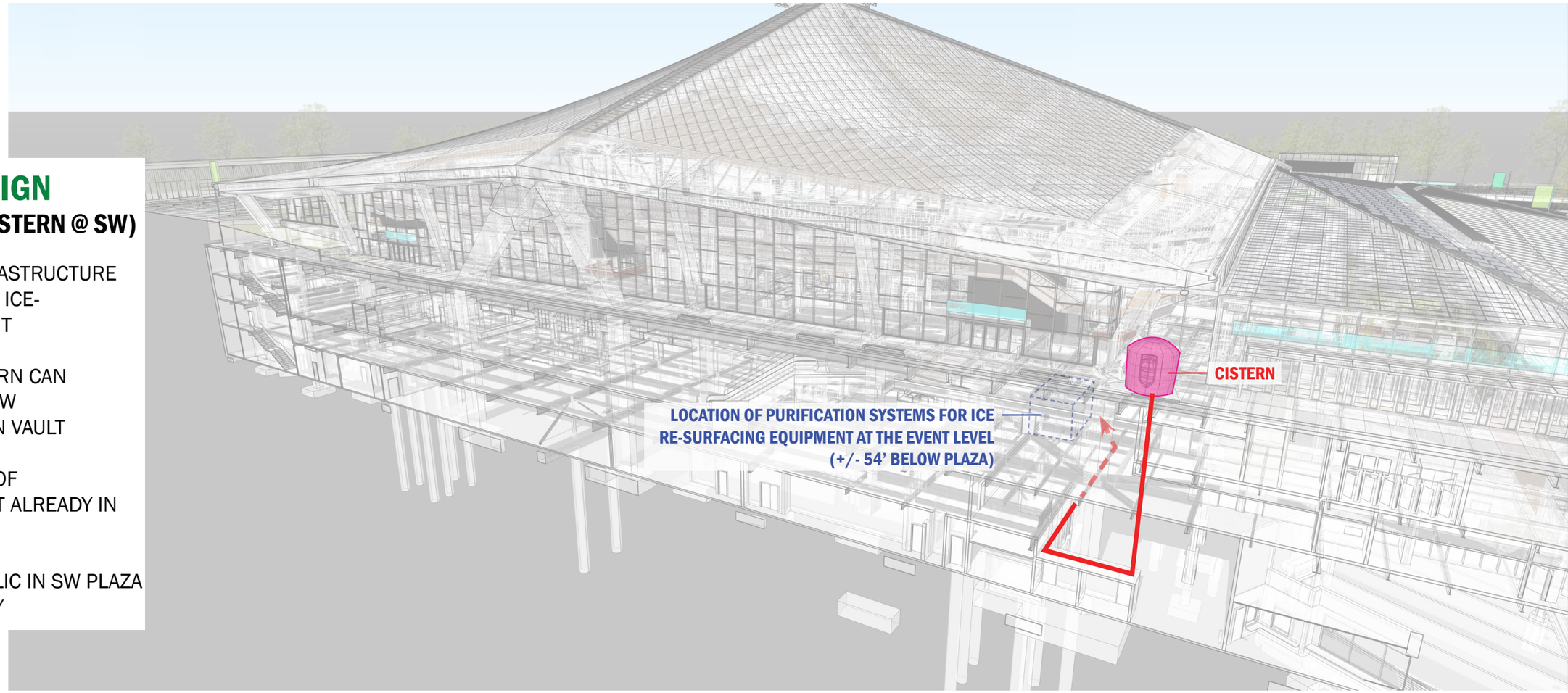
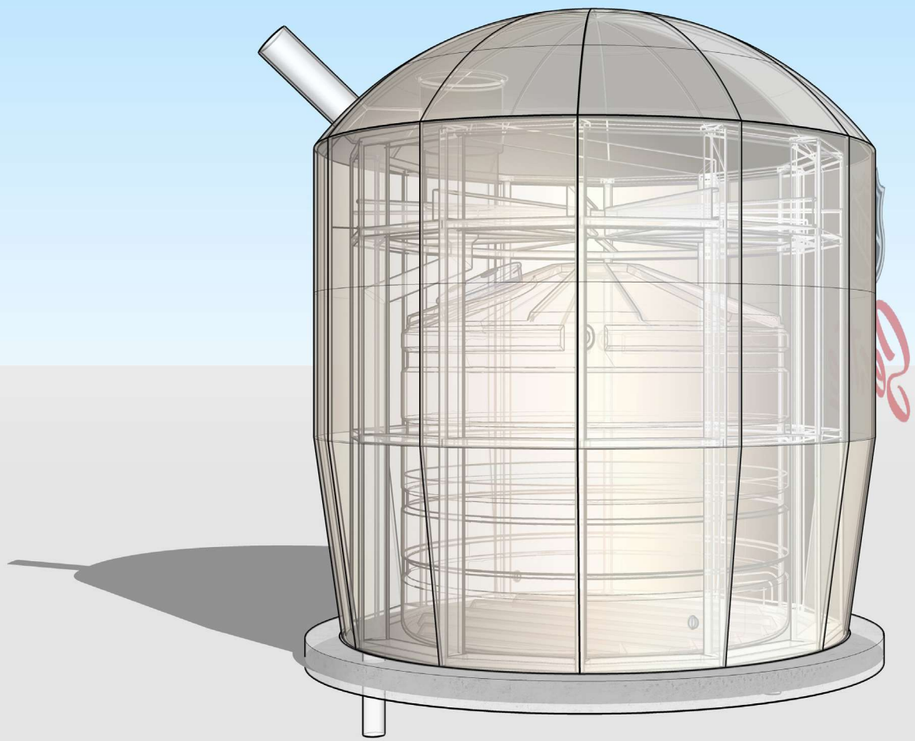
- SIMPLER INTEGRATION OF PLUMBING WITH PROJECT ALREADY IN CONSTRUCTION

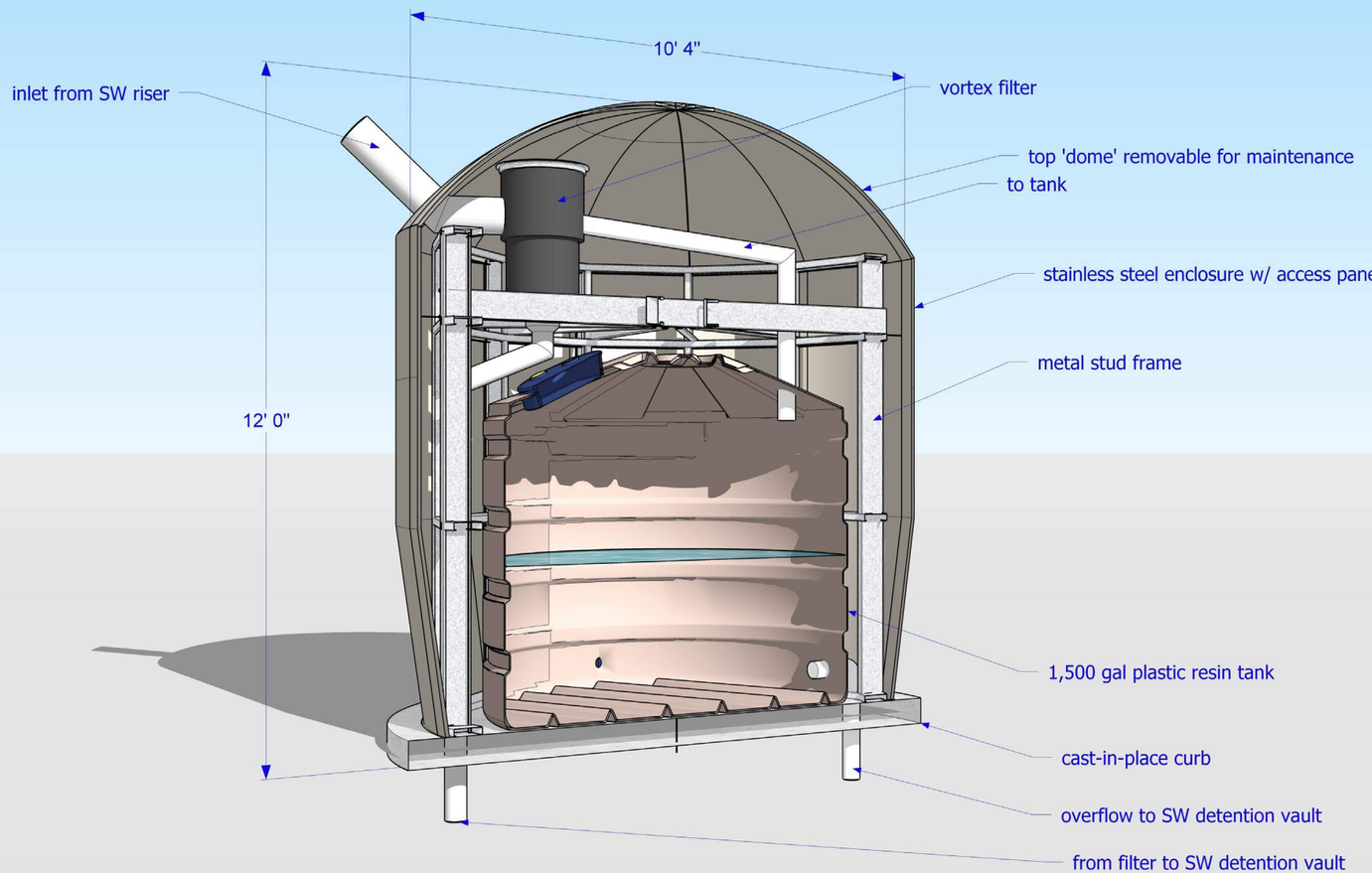
- HIGH VISIBILITY TO PUBLIC IN SW PLAZA AND WEST ATRIUM ENTRY



# RAINWATER TO ICE SYSTEM

## PREFERRED DESIGN - CISTERN COMPONENTS

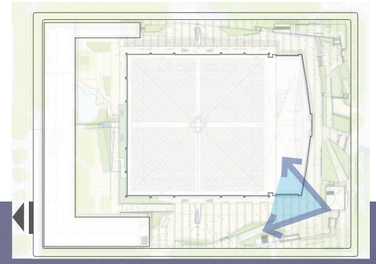




# RAINWATER TO ICE SYSTEM

## PREFERRED DESIGN - RENDERINGS

KEY PLAN



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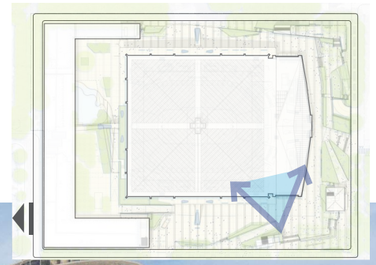

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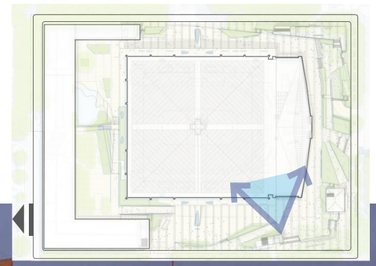
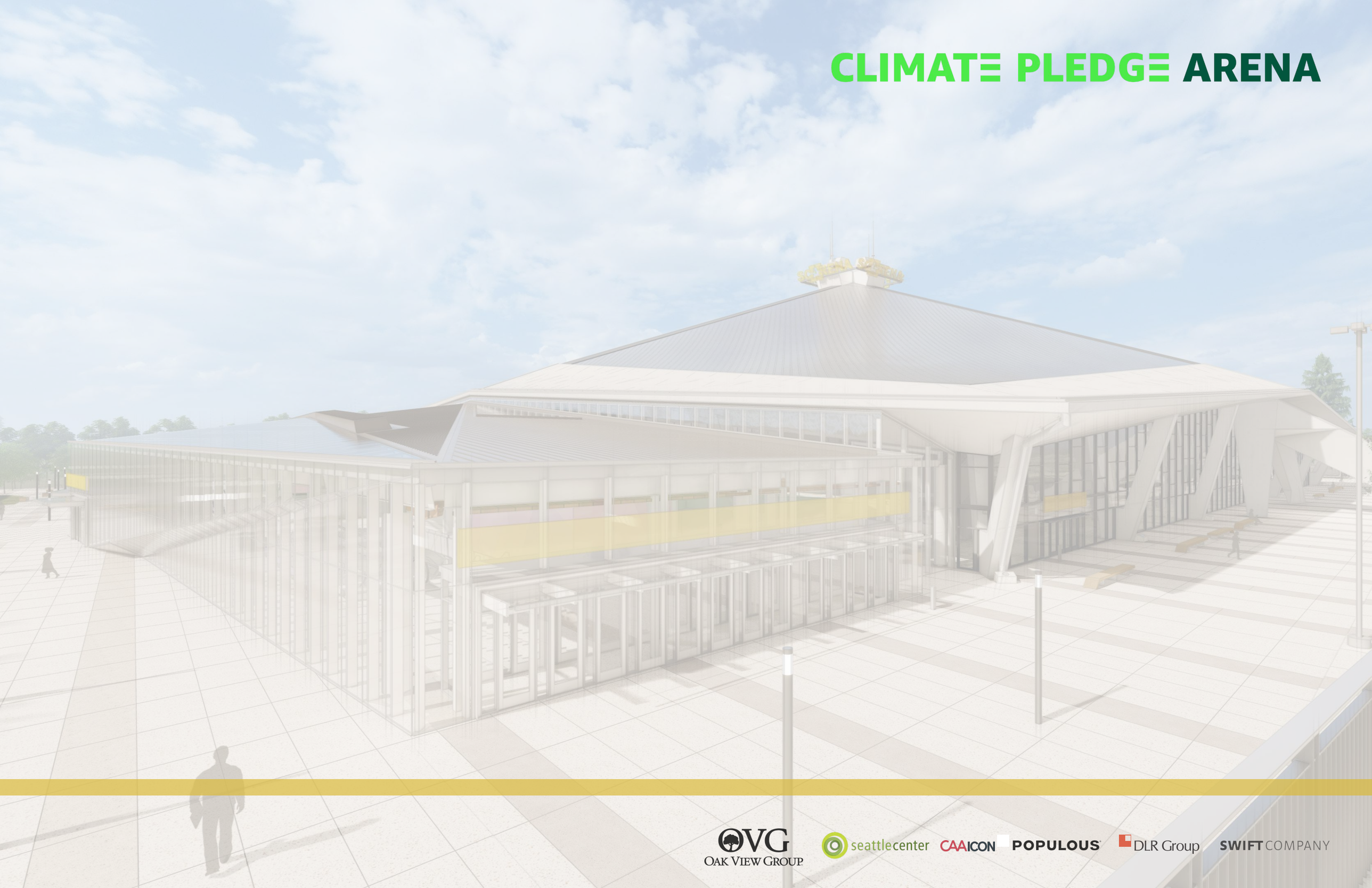


CLIMATE PLEDGE ARENA



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